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PATENT COOPERATION TREATY

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PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 5569 PCT / Me	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP00/02258	International filing date (day/month/year) 15 March 2000 (15.03.00)	Priority date (day/month/year) 15 March 1999 (15.03.99)
International Patent Classification (IPC) or national classification and IPC B29C 44/04, 44/34		
Applicant	STIELER, Ulrich	

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 18 sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

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Date of submission of the demand 11 October 2000 (11.10.00)	Date of completion of this report 05 July 2001 (05.07.2001)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP00/02258

I. Basis of the report

1. With regard to the elements of the international application:*

the international application as originally filed

the description:

pages 1-4, 16, as originally filed
 pages , filed with the demand
 pages 7-12, 14, 15 / 5, 5a, 6, 13, 13a , filed with the letter of (11.01.01//13.06.01)

the claims:

pages , as originally filed
 pages , as amended (together with any statement under Article 19
 pages , filed with the demand
 pages 1-22 , filed with the letter of 13 June 2001 (13.06.2001)

the drawings:

pages 1/4-4/4 , as originally filed
 pages , filed with the demand
 pages , filed with the letter of

the sequence listing part of the description:

pages , as originally filed
 pages , filed with the demand
 pages , filed with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
 the language of publication of the international application (under Rule 48.3(b)).
 the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

contained in the international application in written form.
 filed together with the international application in computer readable form.
 furnished subsequently to this Authority in written form.
 furnished subsequently to this Authority in computer readable form.
 The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, Nos. _____
 the drawings, sheets/fig _____

5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

I. Basis of the report

1. This report has been drawn on the basis of (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

The newly introduced Claim 22 indicates as an alternative that "in the place of the controlled locking mechanism at least one pressure limiting valve is provided".

However, the originally submitted documents (see page 11) state that the pressure limiting valve is provided upstream of the point of injection, in other words not "in the place of the controlled locking mechanism", since the latter is itself provided at the point of injection.

Consequently, the subject matter of the present Claim 22 goes beyond the content of the original disclosure.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP00/02258

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- restricted the claims.
- paid additional fees.
- paid additional fees under protest.
- neither restricted nor paid additional fees.

2. This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- complied with.
- not complied with for the following reasons:

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- all parts.
- the parts relating to claims Nos. _____

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: IV.3

The application lacks unity of invention (PCT Rule 13.1).

The reason for this is as follows:

The general concept linking independent Claims 1 and 21 consists clearly in the dosing of physical foaming agents which are supplied at high pressure to a molten mass.

However, this concept is already known from US-A-4 548 776 (D1) - see col. 9, lines 38-51.

Therefore, Claims 1 and 21 are not linked by a novel and inventive concept which meets the unity of invention requirement.

Furthermore, proceeding from the aforementioned known common concept, the technical concerns of the subject matter of the claims in question are entirely different, namely:

- Claim 1: a pressure-regulated dosing by increasing the pressure during the dosing phase;
- Claim 21: the arrangement of a controlled locking mechanism at the point of injection to ensure that the foaming agent is not converted into gas until it contacts the hot molten mass.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP 00/02258

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-21	YES
	Claims		NO
Inventive step (IS)	Claims	1-21	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-21	YES
	Claims		NO

2. Citations and explanations

1. D1 is considered the closest prior art and discloses a method and a device which shows the dosing of pressurised physical foaming agents (e.g. nitrogen - see col. 6, line 47) using a pressure regulation valve (76, 78) (col. 9, lines 38-51).
2. The method as per Claim 1 differs from this known prior art and from the other available known methods in particular in that it provides for a pressure-regulated dosing of the fuel by increasing the pressure during the dosing phase.
- 2.1 Furthermore, a person skilled in the art does not obtain any suggestion from the available prior art as to a pressure-regulated dosing such as this, which is non-obvious *per se* for achieving the short cycle times indicated.
- 2.2 Consequently, independent Claim 1 and Claims 2 to 20 which are dependent thereon do not appear to meet the requirements of novelty and inventive step (PCT Article 33(1) to (3)).
3. The device as per Claim 21 differs from the

available known devices in particular in that a controlled locking mechanism is provided at the point of injection to ensure that the foaming agent is not converted into gas until it contacts the hot molten mass.

- 3.1 This measure is not suggested in the searched publications.
- 3.2 Consequently, independent Claim 21 also appears to meet the novelty and inventive step requirements of PCT Article 33(1) to (3).
4. All of the claims meet the requirements of industrial applicability (PCT Article 33(1) and (4)).

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

On page 13, paragraph 4, the design of the point of injection as a throttle is merely indicated as "preferable".

This statement contradicts Claim 24, in which this design is presented as an essential feature.